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Does Threatening 'Prospective Retrospection' of Anti-Avoidance Measures Work in Deterring Tax Avoidance on Employee Remuneration?

Evaluation of anti-avoidance

using difference-in-difference estimation

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Outline

- The Avoidance Problem
- The Anti-Avoidance Measure
- Evaluation Objective & Approach
- Differences-in-Differences Methodology
- The Data
- The Model
- Results
- Pre-programme test
- Qualitative analysis
- Lessons

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The avoidance problem

Bonus should be paid as employment income

But incentive to pay bonuses as dividends:

Tax rate for:	Bonus Paid as…	
	Employment Income	Dividend Income
Income Tax	40%	25%
Employer NICs	12.8%	0%
Employee NICs	1%	0%
Effective tax rate	54%	25%

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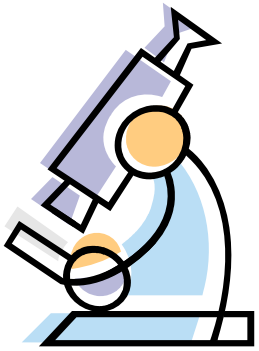
The policy response 1



Takes time to find out

Close down scheme

Avoidance moves to new scheme

History of avoidance

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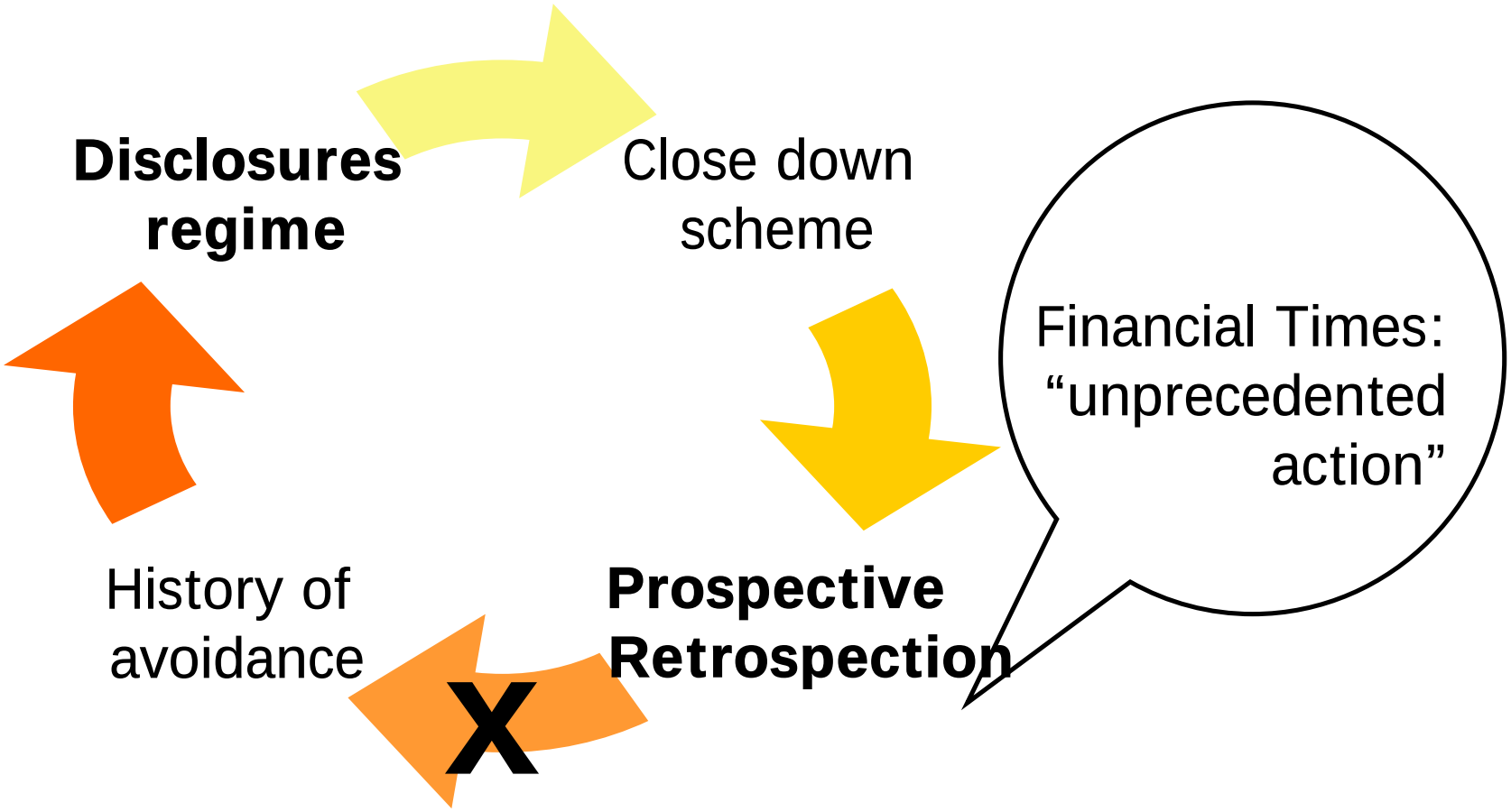
The policy response 2



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Evaluation objective & approach

What does success mean in practice?

- Avoidance disclosures? - already fallen away
- Revenues did not flow into a specific pot or come with a specific tag
- Only 0.1% of overall employment receipts, cannot be detected in aggregate data
- Change in form of remuneration and effective tax rate on individuals previously involved in avoidance. Detect these changes in individual-level data?

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Differences-in-Differences method

	Average before Treatment	Average after Treatment	Difference *Within Groups Over time*:
Treatment Group	$Before_{Treatment}$	$After_{Treatment}$	$After_{Treatment}$ - $Before_{Treatment}$
Control Group	$Before_{Control}$	$After_{Control}$	$After_{Control}$ - $Before_{Control}$
Difference-in-Differences = difference b*etween Treatment and Control groups over time*			($After_{Treatment}$ - $Before_{Treatment}$) – ($After_{Control}$ - $Before_{Control}$)

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Differences-in-Differences 2

	ETR Before Treatment (April 2004)	ETR After Treatment (April 2005)	Difference *Within Groups Over time*:
Treatment Group: Avoiders	39%	45%	6 percentage points
Control: Non-Avoiders	31%	33%	2 percentage points
Difference-in-Differences:			**4 percentage points**

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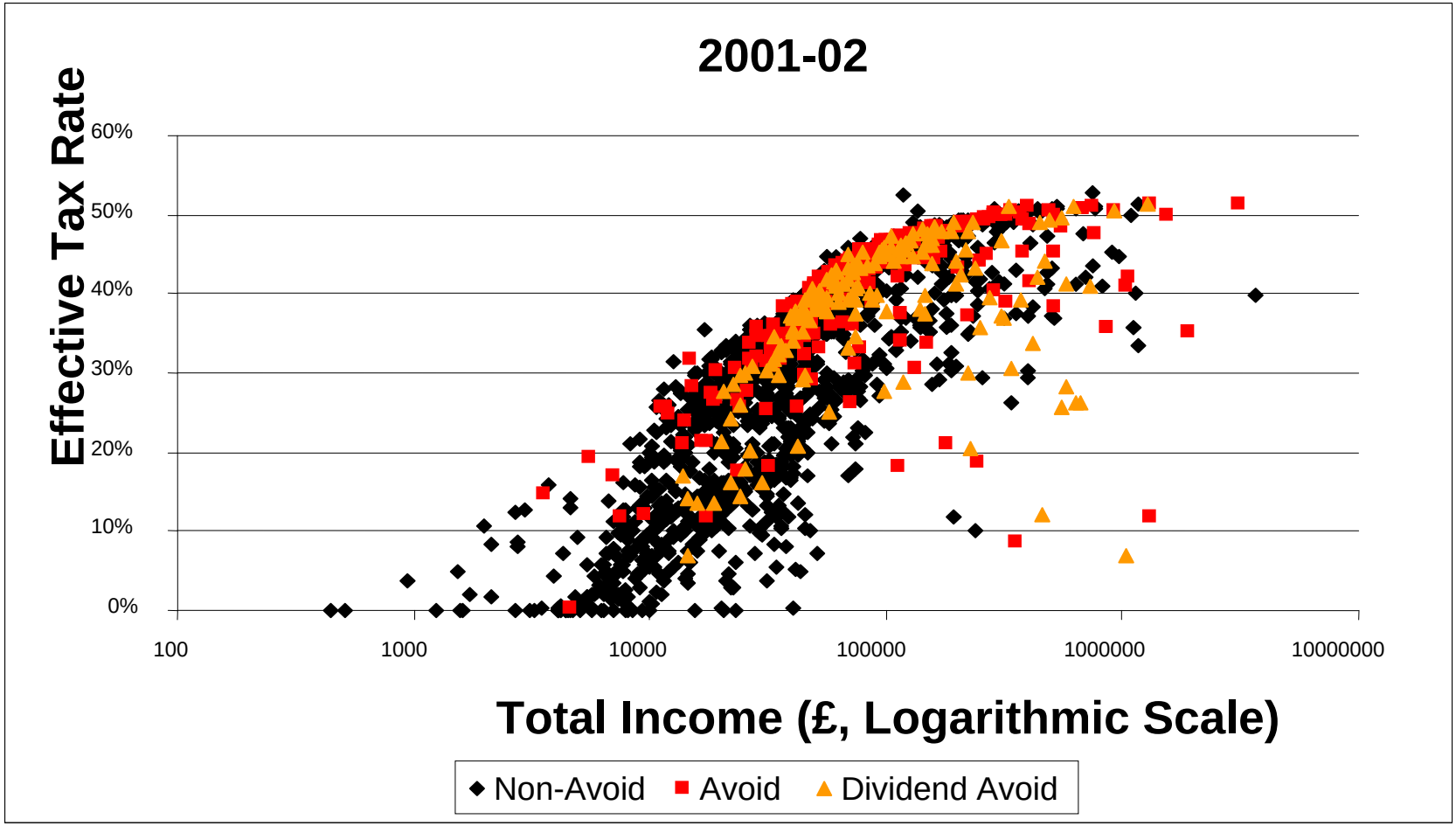
The data: before the announcement



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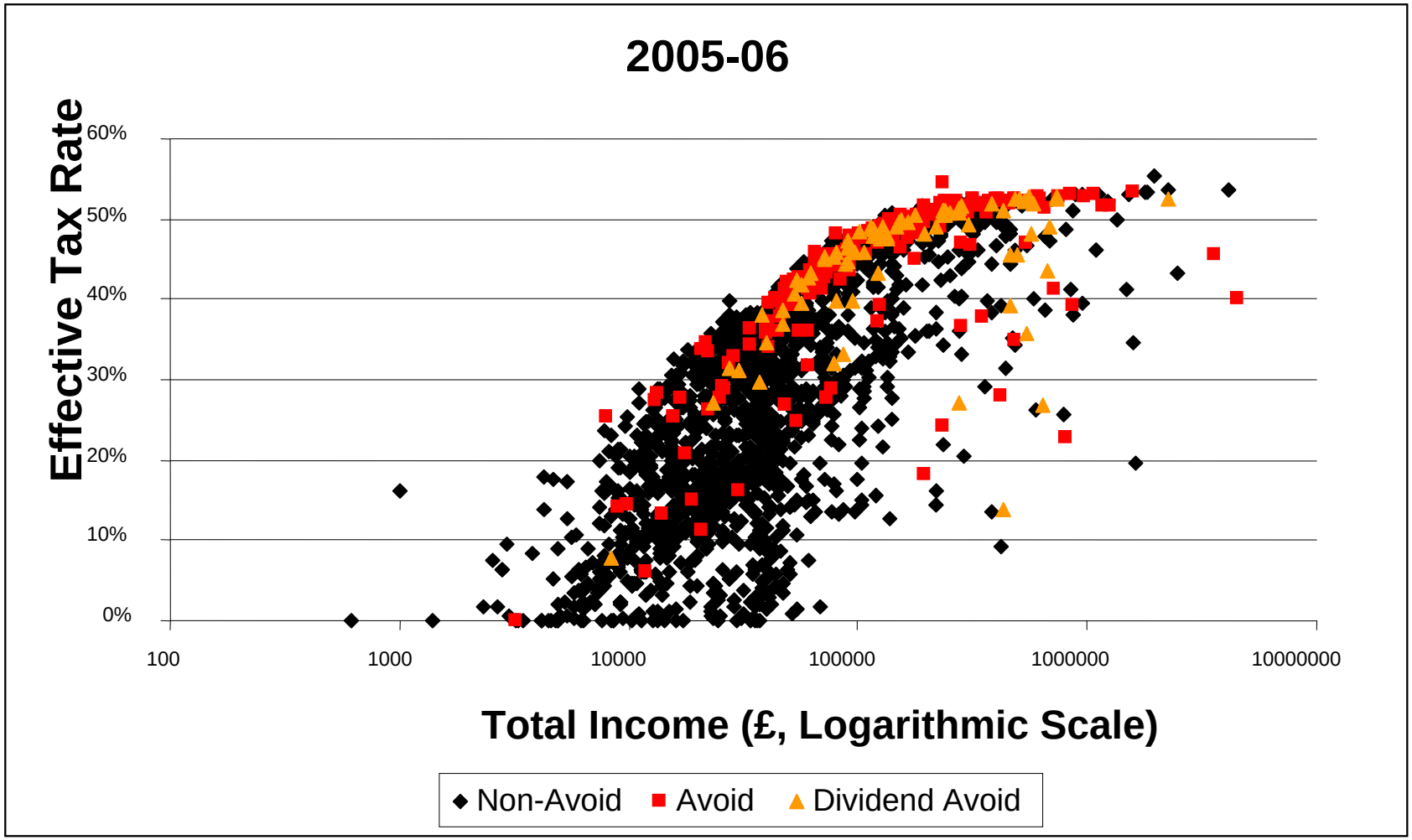
The data: after the announcement



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Data: Average effective tax rates

Year	Average (Mean) Effective Tax Rate		
	Non-Avoider	Avoider	Positive-Dividend Avoider
2001-02	30.6%	39.0%	37.7%
2002-03	31.1%	40.2%	38.8%
2003-04	30.4%	42.3%	42.4%
2004-05	30.8%	43.3%	44.4%
2005-06	28.9%	44.0%	44.4%

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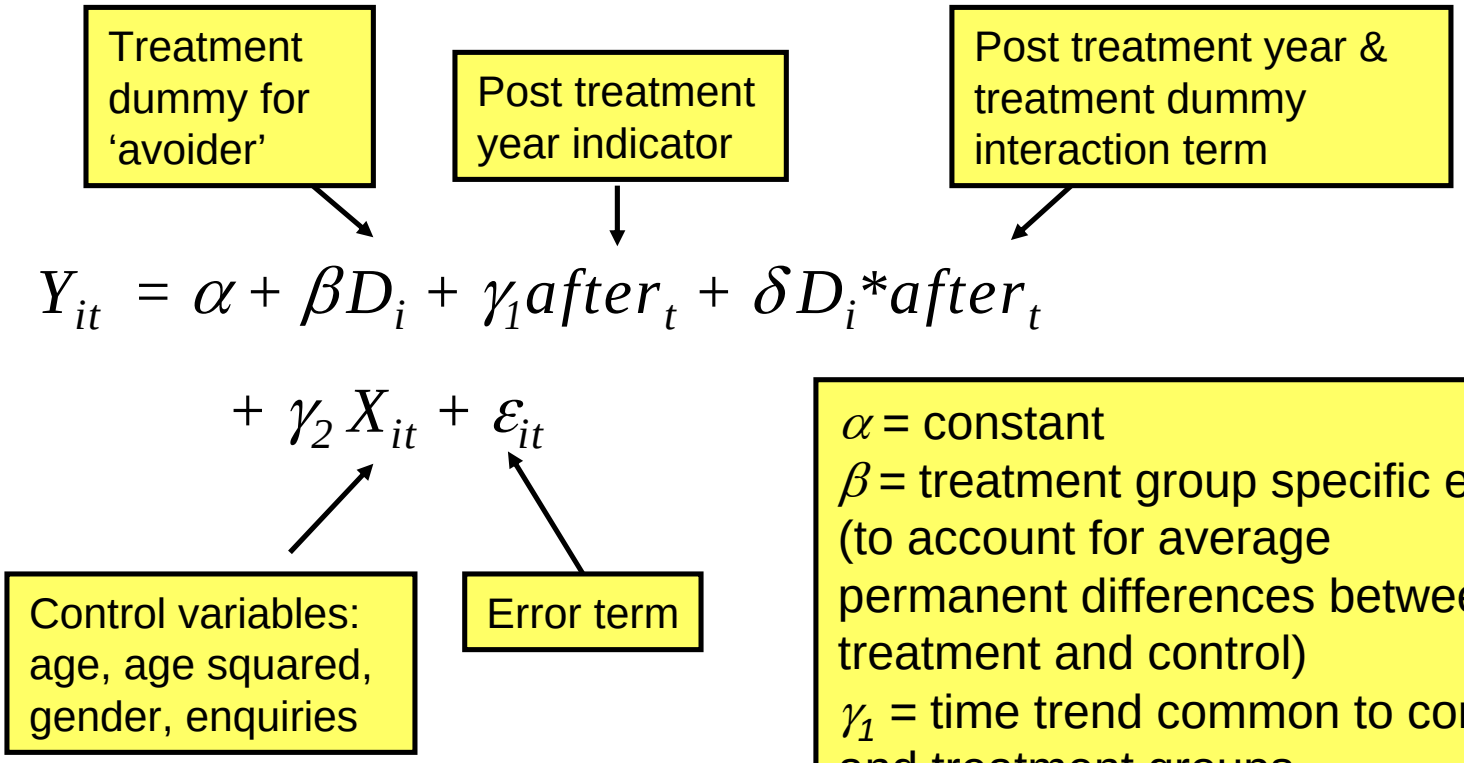
Model I Basic D-i-D

- Simple ordinary least squares regression



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Model II Subgroup Specific effects

- Estimate sub-group effects for avoiders with positive dividend income

$$Y_{it} = \alpha + \beta_1 D_i^1 + \gamma_1 after + \delta_1 D_i^1 * after$$

$$+\beta_2 D_i^1 D_i^2 + \gamma_2 after * D_i^2 + \delta_2 D_i^1 D_i^2 * after$$

$$+ \gamma_3 X + \varepsilon_i$$

Interact treatment dummy for positive dividends subgroup (D^2) with:
-treatment dummy for avoider subgroup (D^2)
-the after indicator
-the interaction term to pick up the subgroup specific treatment effect

- Sub-group treatment effect is: $[\delta_1 + \delta_2]$

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Summary of regression results

Estimated percentage point (ppt) increase in:	2004-05		2005-06	
	Avoider [δ_1]	Positive Dividends Avoiders [$\delta_1+\delta_2$]	Avoider [δ_1]	Positive Dividends Avoiders [$\delta_1+\delta_2$]
Effective tax rate	0	**5.6**	2.8	**5.5**
% dividend income	3.4	-11.4	3.5	-12.4
% employment income	-4.2	14.3	0	15.1

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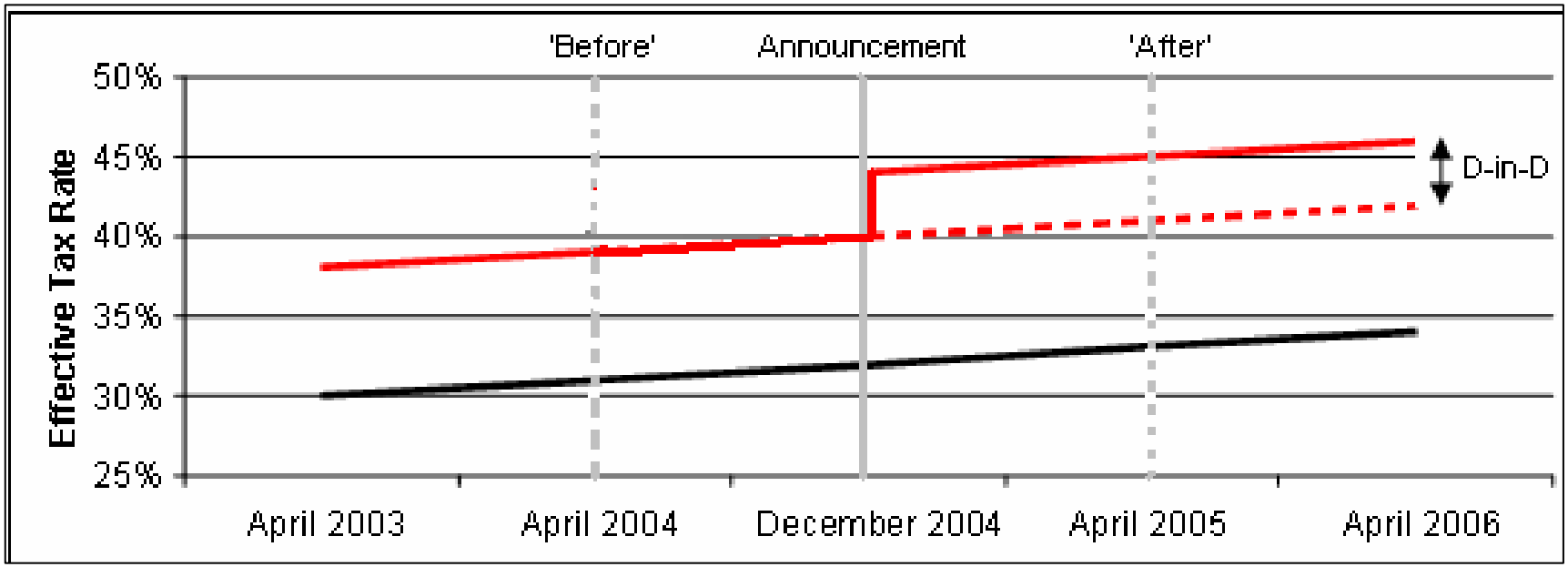
Pre-programme Test



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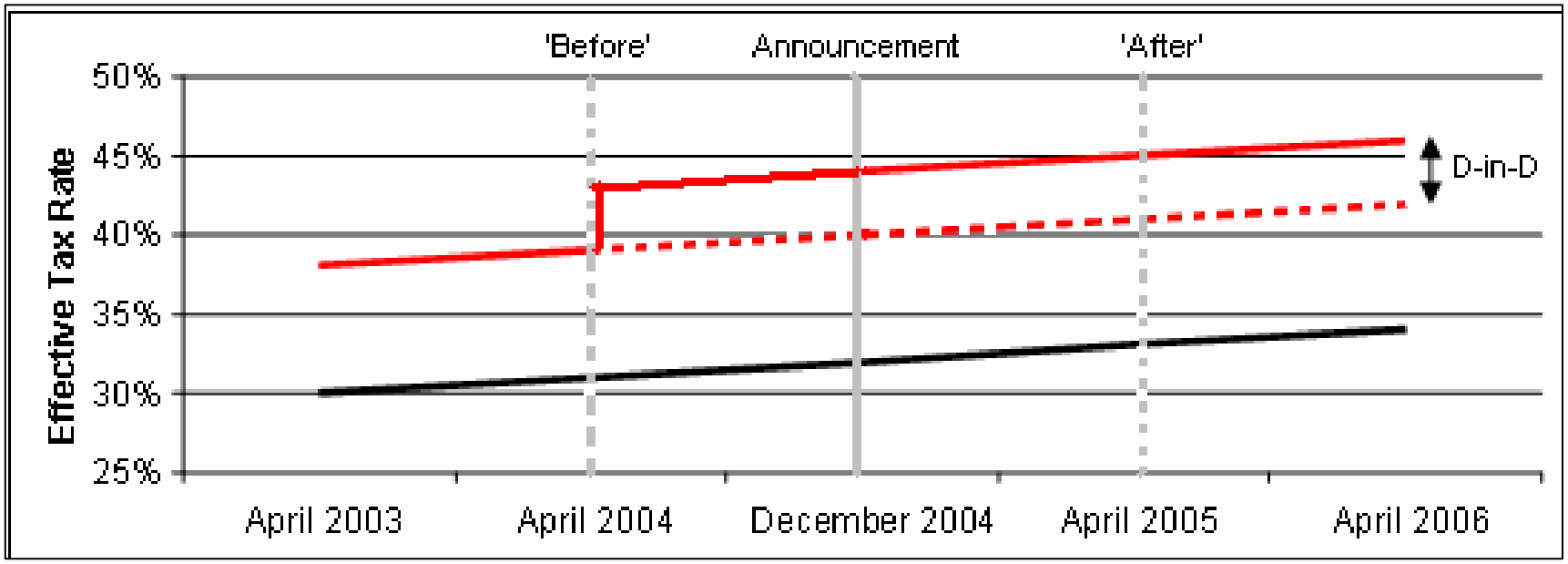
Pre-programme Test



- Failed pre-programme test for 2003-04: positive dividend avoiders increased ETR by 4.9 percentage points
- Model using '**Random Growth Model**'

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Qualitative analysis

- 50 complex taxpayers, 7 known employer avoiders:
- 34 had some change in avoidance:
  - 3 started to avoid
  - 15 changed avoidance scheme
  - 16 stopped avoiding
- Ending some employer- & individual-based avoidance
  - Yield may be greater than found in quant analysis
- Switching from employer- to individual-based avoidance
  - Switch in risk, lose economies of scale
- Some on-going individual based avoidance
  - Areas for future action

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Lessons learned

Policy

1. Policy worked – 5ppt increase in effective tax rates
2. Raised most of forecast yield
3. Understanding elements not working well, to inform future policy
4. Success of threat of retrospection?

Analysis

5. Data cleansing and matching for future use
6. Developed our in-house econometric skills
7. Combining data, institutional knowledge & analysis to refine as we went along
8. New model for technical support from consultants

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